REMARKS

Claims 1-9 remain pending in the above-referenced application.

Claims 1-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent No. 6,098,585 to Brehob et al. ("Brehob") in view of United States Patent No. 6,688,104 to Bacueric et al. ("Bacueric"). Brehob shows that one may start an engine by identifying a combustion chamber having a prespecified air volume inside and being in a position after top dead center. Fuel is injected into the combustion chamber in order to produce a combustible mixture. The mixture is ignited (Abstract). If a cylinder is not in a suitable position for achieving sufficient combustion and rotation, the engine is brought into a desired position. For instance, a braking system may be used in order to ensure a suitable end position of the crankshaft. It may also be provided that the engine continues to be operated for a predefined time after a request to shut it down, so that the engine may be placed in a desired position for the engine start.

However, in contrast to that, in claim 1, it is not important, during the running down of the combustion engine, to bring a cylinder into a position suitable for a subsequent direct start, but what matters is that a cylinder that comes to a standstill in a suitable position for a subsequent direct start is also provided with a sufficient charge to increase the reliability of the direct start. Consequently, claim 1 differs from Brehob not only in the way determined by the Examiner, namely that in claim 1, by contrast to Brehob a compressor is used, but that, with the aid of this compressor, in the last analysis, the important thing is the charge of the at least one cylinder that comes to a standstill in the suitable position for the subsequent direct start.

A method and a device for operating an electrical supercharger is known from Bacueric, in which the electrical supercharger is operated for cooling and/or diagnostic purposes in the non-fired operation of the combustion engine. In this context, for example, by activating the electrically operated supercharger after shutting down the vehicle, an additional operating area is opened for the engine control, in which functions are carried out which depend on an air flow in the intake manifold and/or in the exhaust gas tract of the vehicle (column 1, lines 43 to 47). In this context, in the subject matter of Brehob, in contrast to claim 1, when activating the electrically operated supercharger after shutting down the vehicle, the important thing is not the charge of at least one cylinder that comes to a standstill that is suitable for a subsequent direct start. For one thing, the important thing is not the

charge of a cylinder. Rather, the important thing is cooling or the diagnosis of a component of the combustion engine, for instance, the diagnosis of the tank ventilation system.

In the case of the component cooling, independently of the operating state of the combustion engine, an air flow is generated in the intake manifold and/or, in response to opened intake valves and outlet valves, also in the exhaust gas tract and/or an overpressure is built up in the intake manifold. After shutting down the engine, with the vehicle in a standing position, therefore, for example, for a predetermined time, a control signal is generated by the electronic control unit for the electrically operated supercharger. This blows air from the intake manifold via the intake valves and the outlet valves to the exhaust gas tract, and in this way cools the combustion engine and its components and or the catalytic converter. In order to improve the flow through the cylinders of the combustion engine and the exhaust gas tract, it is provided to shift the combustion engine into a position, using an electric motor, especially a crankshaft starter generator, in which a specified opening of the intake valve and the outlet valve comes about, which allows an optimal through flow (column 3, lines 21 to 45).

In the case of the diagnosis, the method may also be carried out at various crankshaft settings, and therewith, valve overlaps, if the crankshaft setting is able to be changed, using a starter or a crankshaft starter generator (column 4, lines 58 to 67). This shows that it is not the charge of a cylinder that is important in Bacueric, but rather that the air is blown from the intake manifold into the exhaust gas tract for cooling or the diagnosis of components of the internal combustion engine. In other cases, for example, for the diagnosis of tank ventilation, after operating the supercharger, an overpressure is built up in the intake manifold (column 4, lines 1-5). In that case, too, the aim is not to charge a cylinder. That is why one cannot infer from Bacueric that the compressor in it, that is driven electrically, is activated after shutting down the internal combustion engine in order to charge at least one cylinder.

As was described, what is important in Bacueric in the activation of the electrically operated compressor, after shutting down the engine, is also not that a cylinder comes to a standstill in a suitable position for a subsequent direct start. As has already been described, the position of the crankshaft, and thus the cylinder, is set in such a way that a specified opening of the inlet and the outlet valve comes about, which permits an optimal flow rate for component cooling (column 3, lines 43-45). This position has nothing to do with a position that is suitable for a subsequent direct start. The corresponding applies to column 4, lines 58-67, of Bacueric, according to which the crankshaft is set in such a way that the diagnosis may

be performed at various crankshaft settings, and therewith, valve overlaps. Here too, this is not about the setting of a position suitable for a subsequent direct start.

Another difference comes about in that, in Bacueric, the electrically operated supercharger is activated after stopping the vehicle or in non-activated driving operation such as an overrun operation (column 3, pages 47-59), whereas in claim 1 the supercharger is activated in response to a slowing down of the combustion engine. In Bacueric, shutting down the vehicle is preferably ascertained based on the ignition switch signal and/or the rotary speed signal of the internal combustion engine, but the standing vehicle based on travel speed or wheel speed signals. If the engine has been shut down and the vehicle is standing, the electrically operated supercharger is activated (column 3, lines 53 to 59). Quite clearly, in Bacueric, the electrically operated supercharger is first activated when the engine has been shut down, that is, the engine's rotary speed is equal to zero. In this context, after shutting down the engine, the electrical supercharger is operated for a predetermined time period and up to the setting in of a specific overpressure or up to the setting in of a specific air flow (column 5, lines 54 to 57). By contrast to this, in claim 1, the compressor is activated when there is a slowing down of the combustion engine. In this context, the slowing down of the combustion engine should be understood in such a way that it at least includes the last opening of the intake valve before the engine's standstill. Consequently, in claim 1, the compressor is activated even before shutting down the combustion engine, that is, before the value zero is reached for the rotary engine speed. Activation of the compressor after shutting down the engine is thus not required in the invention of claim 1, so that energy for the operation of the first compressor may be saved.

Furthermore, the slowing down of the combustion engine in claim 1 should also be distinguished from non-fired driving operation, such as overrun operation, according to column 3, lines 47-48, Bacueric. When there is slowing down of the combustion engine according to claim 1, the important thing is that the engine's rotary speed undershoots a predefined threshold value between idling speed and zero, this predefined threshold value, in an advantageous way, being considerably below the idling speed. The overrun operation or non-fired driving operation, stated in column 3, lines 47 to 48, of Bacueric, however, stands out in that it has an engine speed greater than idling speed. In the non-fired driving operation or overrun operation of Bacueric, the engine is also not supposed to stall, whereas the slowing down of the combustion engine according to claim 1 characterizes precisely that operating state at which the engine is to be shut down. In any case, a combination of Brehob and Bacueric does not give one skilled in the art any reason to activate a compressor, during

the slowing down of the combustion engine, described in Brehob, during which the engine is to be brought into a position desired for an engine start, in order to charge a cylinder which comes to a standstill in a position that is suitable for a subsequent direct start. A combination of these references is even contradictory. While in Brehob, at slowing down the engine is to be brought into a suitable position for a subsequent engine start, Bacueric describes carrying out the moving of the internal combustion engine, using an electric motor, especially a crankshaft starter generator, into a position in which a specified opening of intake and outlet valves comes about which allows an optimal flow rate (column 3, lines 40 to 45 of Bacueric) or the diagnosis at various crankshaft settings and thus valve overlaps (column 4, lines 58 to 67 of Bacueric). With that, however, the engine position known from Brehob for the subsequent engine start is left alone again, so that the aim of Behob and also of claim 1 of a favorable cylinder or engine setting for the subsequent direct start can no longer be achieved.

Therefore, withdrawal of this rejection is requested.

It is therefore respectfully requested that the objections and rejections be withdrawn, and that the present application issue as early as possible.

Respectfully submitted,

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